US Army Corps
of Engineers
Huntington District

Belleville Locks & Dam

Barge Accident on 6 Jan 05

John Clarkson

US Army Corps of Engineers
Huntington District

One Corps, One Regiment, One Team

Belleville Barge Accident

- Salvage Operations
- Lessons Learned
- Preventive measures considered to lessen the chances of losing pool in the event of future barge accidents.

BARGE ACCIDENT

- On January 6, 2005 the M/V Jon Strong, a twin screw towboat was up bound with 12 loaded barges.
- Nine of the barges drifted down into the dam.
- Four of the barges went through the dam gates, however, five of the barges lodged or sank against the dam piers.

Barge Location

- **AEP 8815 – sank against the pier between Gates 3 and 4**
- **AEP 8823 – lodged against the pier between Gates 4 and 5.**
- **PEN 207 – wrapped around the pier between Gates 6 and Gate 7.**
- **AEP 611 – lodged against the pier between Gates 6 and 7.**
- **MEM 94256 - lodged against the pier between Gates 6 and 7.**

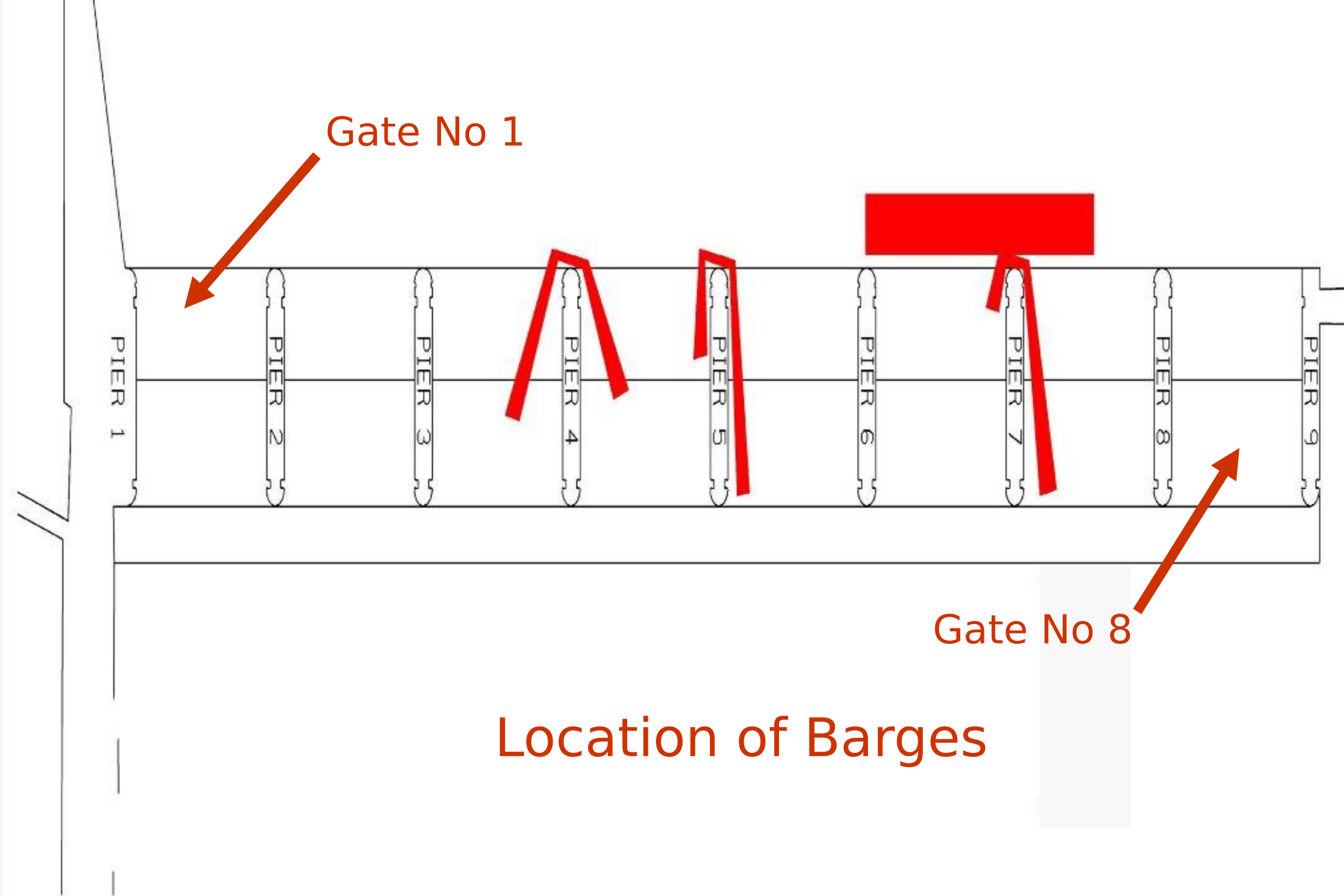
Belleville Barge Accident

- The barge accident blocked 5 of the 8 gatebays.
- The effects of the subsequent pool loss to the area caused approximately 5 million dollars a day in damages.

BARGE ACCIDENT, cont

- Heavy Rains had caused flood conditions, the dam gates raised out of the water.
- High water allowed for some lockages to continue, Locks closed to traffic for two of the four weeks
- Loss of pool aided salvage operations

Aerial View of Belleville Locks and Dam


Gate No 1
PIER 1
PIER 2
PIER 3
PIER 4
PIER 5
PIER 6
PIER 7
PIER 8
PIER 9
Gate No 8
Location of Barges

Belleville Locks & Dam

- **Tow Boat Operator responsible for hiring 2 salvagers to remove barges.**
- **Assembled Belleville Team, Included Industry, Coast Guard and the Corps.**

Belleville Locks & Dam

Get salvage equipment onsite as quickly as possible before loss of pool prohibits transport.

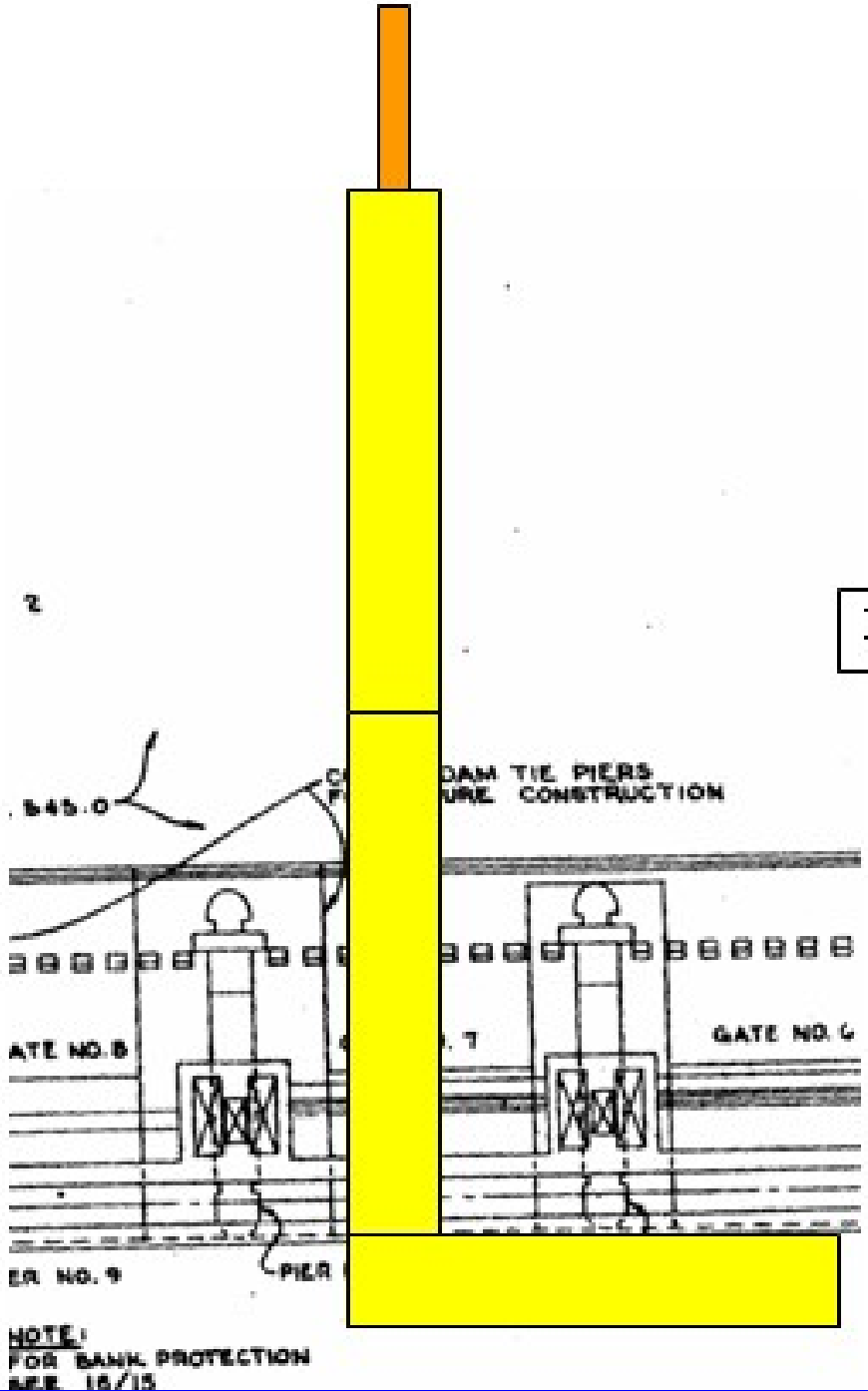
Salvager's Equipment

- **2 towboats 4176 kilowatt (5600 HP)**
- **454 metric ton (500 ton) A-frame crane**
- **Pulling barge**
- **Hydraulic shear**
- **Cutting beam**
- **Numerous other smaller cranes, A-frame cranes, and barges**

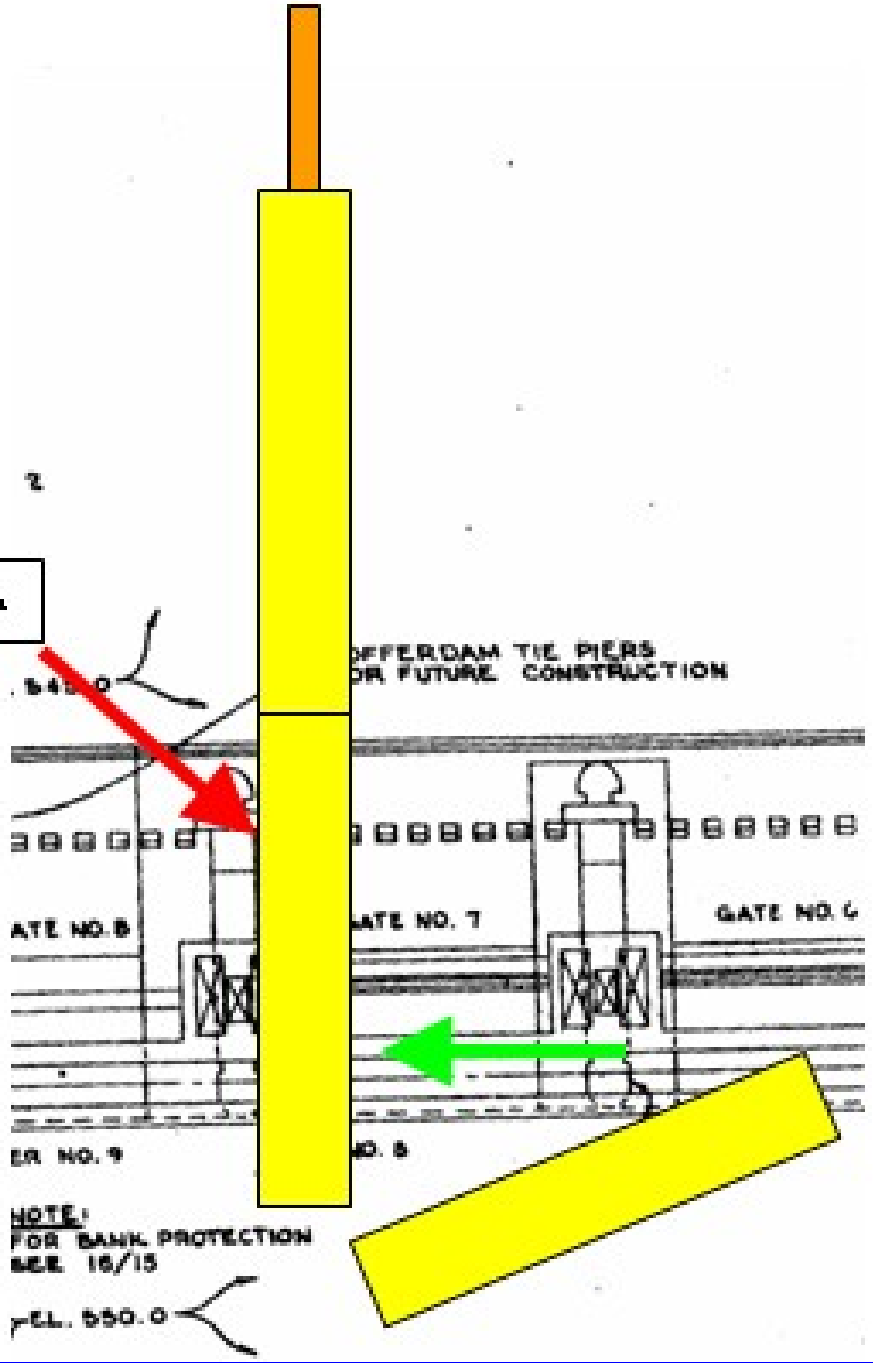
Various Concepts to Remove the Barges

- **Push Floating Barge**
- **Pull Barges Upstream off the Dam**
- **Pull and Lift Barges Downstream**
- **Cutting Beam**
- **Hydraulic Shear**
- **Underwater Cutting by Divers**
- **Pull Downstream with Three Towboats**

MEM 94256


545.0
GATE NO. 6
NOTE:
FOR BANK PROTECTION

IMPACT AREA


GATE NO. 7
GATE NO. 6
NOTE:
FOR BANK PROTECTION
SEE 16/15
EL. 550.0

US Army Corps of Engineers
Huntington District

One Corps, One Regiment, One Team

Salvage Equipment Upriver

River Salvage digging with a crane to anchor a barge with winches to lower down their excavator
with a hydraulic shear

Okie Moore Equipment:
Crane barge
2 pulling barges
M/V Capt. Val

M/V James Moorehead

Pull from Upstream
Need to install pad-eye

2 in (5cm) pulling cables being installed

US Army Corps
of Engineers
Huntington District

Cutting Beam and Pile Dri

- **Started to use cutting beam (Successfully used by the Louisville District) Ultimately not used, only had one barge that might be able to use, restriction that the beam could not extend beyond pier**

Pull and lift barges from downstream

Cutting torch is the salvagers most useful

KOMATSU
Hydraulic shear

Divers cutting PEN 207

After 17 days of trying, the first of 5 gates was cleared

Most of the wreckage came out by cutting in sections with a torch and pulling downstream

Bow down river, with cargo compartment outlined
Upstream rigging pulled out of the last barge which left it on the floor of the dam.

US Army Corps of Engineers
Huntington District

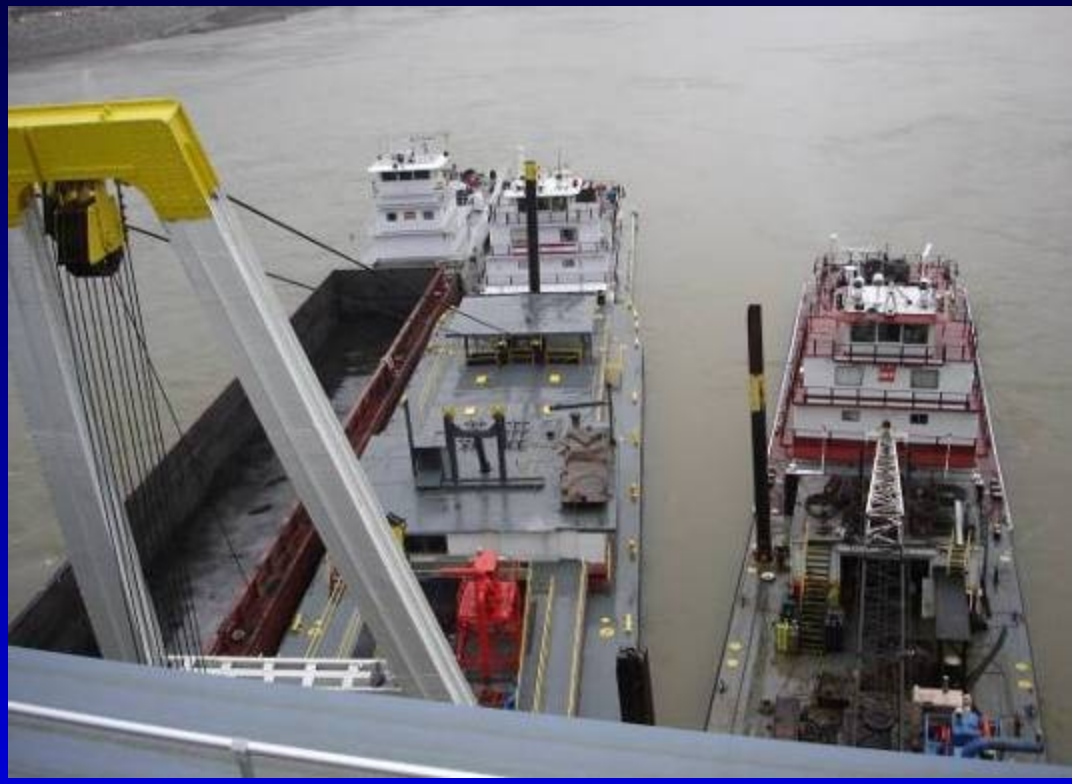
One Corps, One Regiment, One Team

Saturday, Jan 29th

Worked a sling under the bow of AEP 8815.

Last Barge

- **Running out of options and tried pulling the downstream rigging with three towboats. While unsuccessful, there was some movement, the barge appeared to be hung up on a part of the**



US Army Corps
of Engineers
Huntington District

Lifting out with Bulkhead Crane and the 454 metric ton (500 ton) A-frame to lift the barge. The salvager raised one end of the barge with the A-Frame crane and worked a sling under the mid-section to rig to the dam's bulkhead to lift the other end out of the water and then cut the barge into

KOMATSU

US Army Corps of Engineers
Huntington District

t, One Team

M/Vs Capt John Reynolds
and James Garret coordinated the movement out of Gate 3 and down river.

US Army Corps of Engineers
Huntington District

One Corps, One Regiment, One Team

Finally, after 26 days the locks reopened

Queues at the lock increased to a total of fifty-three (53) towboats waiting

US Army Corps of Engineers
Huntington District

One Corps, One Regiment, One Team

Past Accidents

Smithland Locks and Dam

Cheatham Locks

Pike Island

US Army Corps of Engineers
Huntington District

One Corps, One Regiment, One Team

Past Accidents

Columbia Lock and Dam

Pipe to Protect Diver

Maxwell Locks and Dam

Barge Accident Study

- Studying modern era pool loss accidents to find commonalities.
- Preventive measures are being considered to lessen the chances of losing pool in the event of future barge accidents.
- Homeland Security

Barge Accident Study, cont.

- The preferred solution would be transported via roadway to quickly get onsite and be deployed with minimum if any floating plant (working barge). It would also be universal and could be used at many lock projects.
- Several options are being considered, including an integrated pile driver/cutting beam that can

Belleville Barge Accident

QUESTIONS

John.D.Clarkson@usace.army.mil